

Sheet 1 of 9

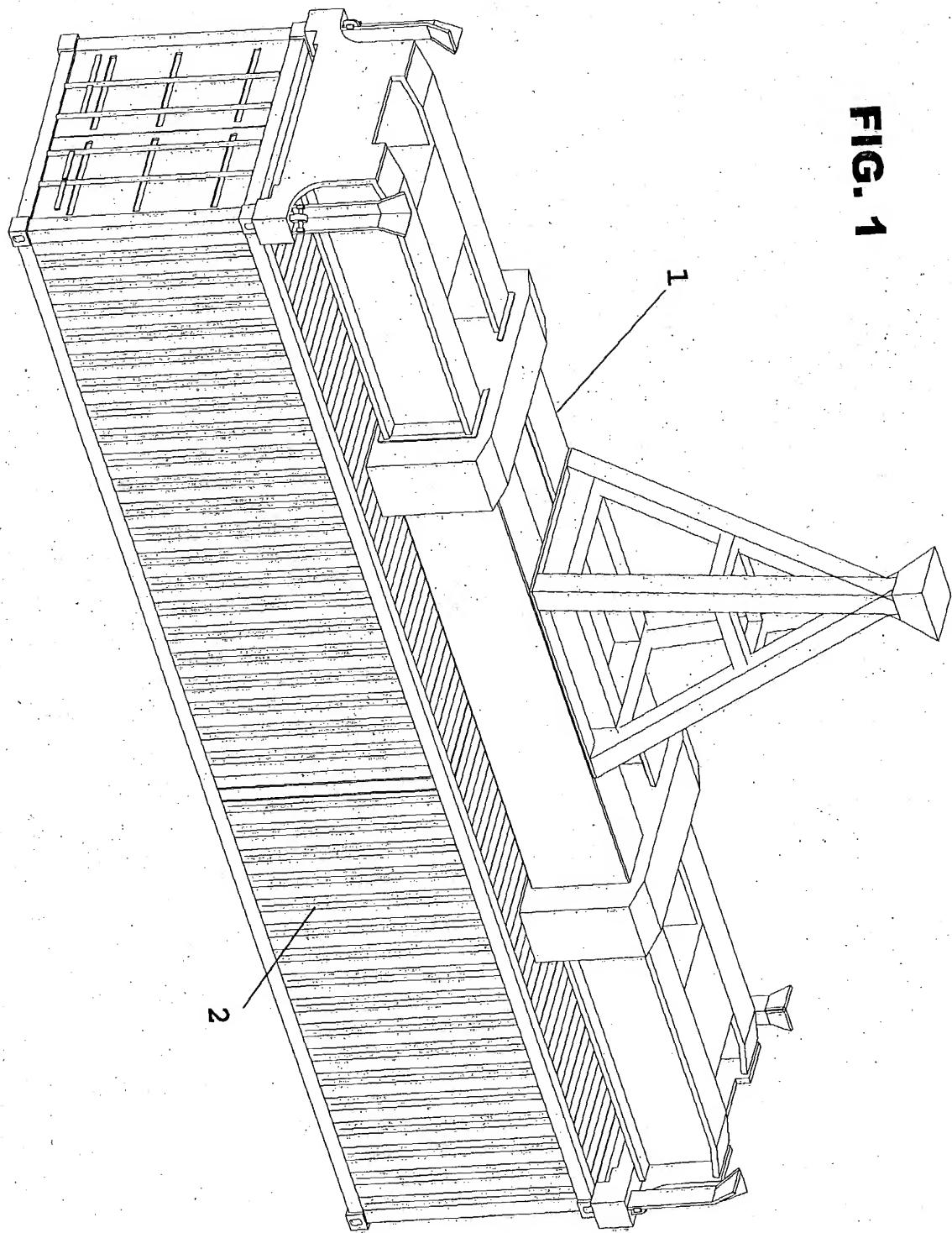


FIG. 1

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FIG. 2

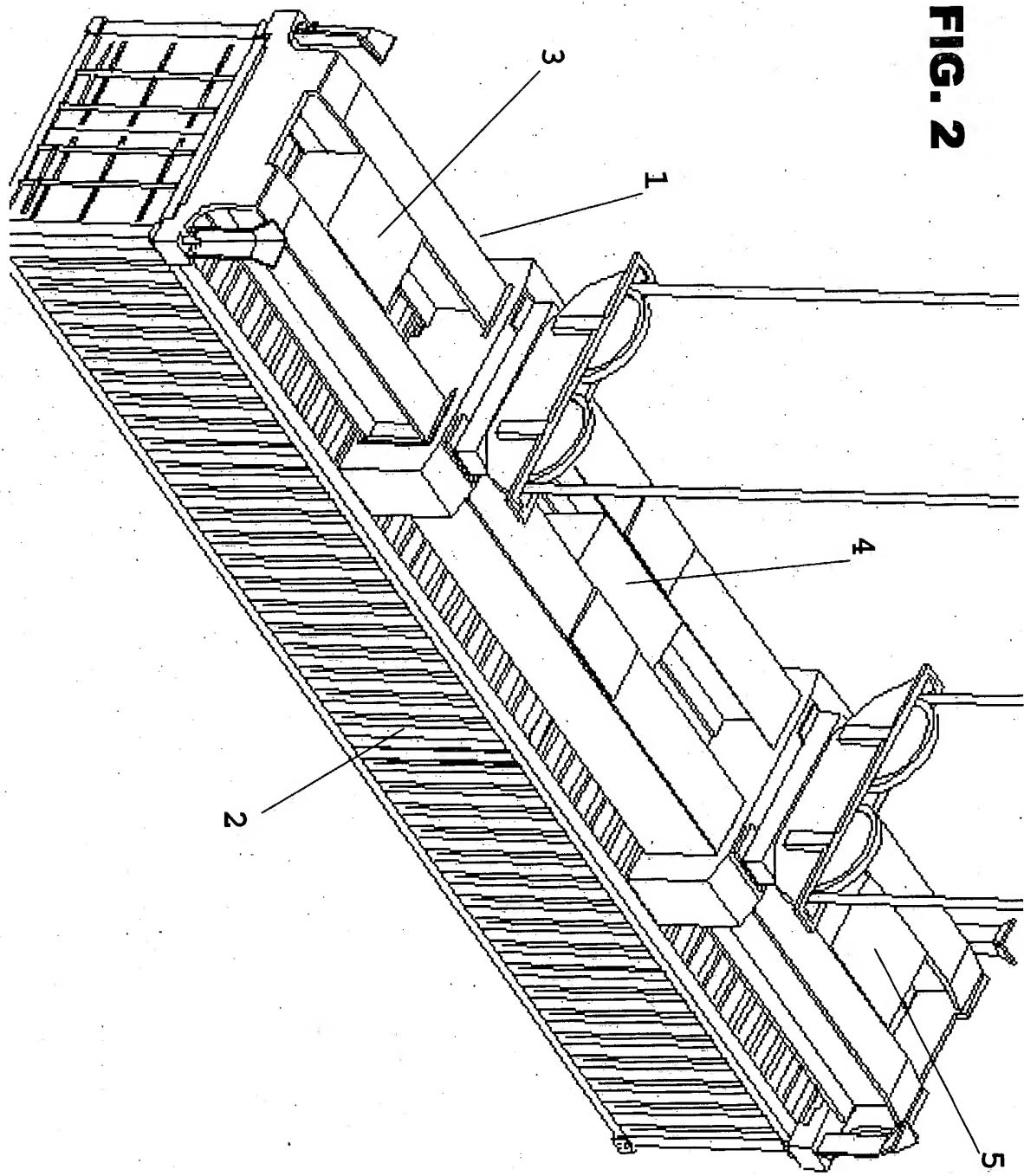


FIG. 3

FISSILE OR RADIOACTIVE MATERIAL DETECTION DEVICE	RADIATION SHIELDING DETECTION DEVICE	MICROPROCESSOR
6	7	8
9	CERTIFICATE	

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FIG. 4

6 OR 7

10

RADIATION DETECTOR

CONTAINER ID

12

WFD

8

COMPUTER

SOFTWARE PROGRAM

11

13

MD

14

MFD

15

IDBFD

UNSHEIELDED
NUCLEAR
WEAPON

MANIFEST
CONTENTS

RADIATION
SHEILDING
MATERIAL

LEGITIMATE
BUT
DIFFERENT
FROM
MANIFEST

UNKNOWN

16

17

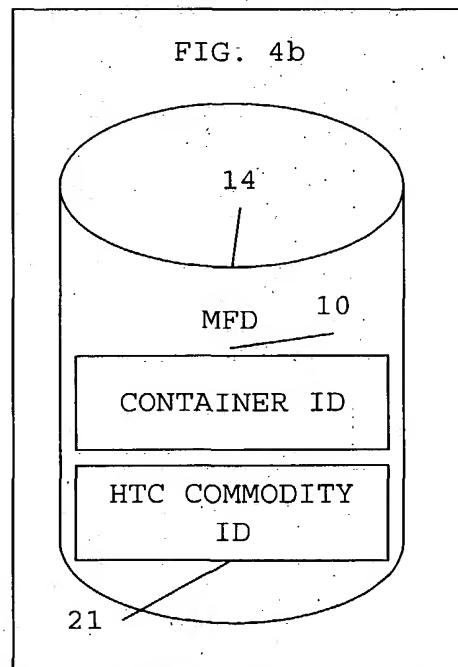
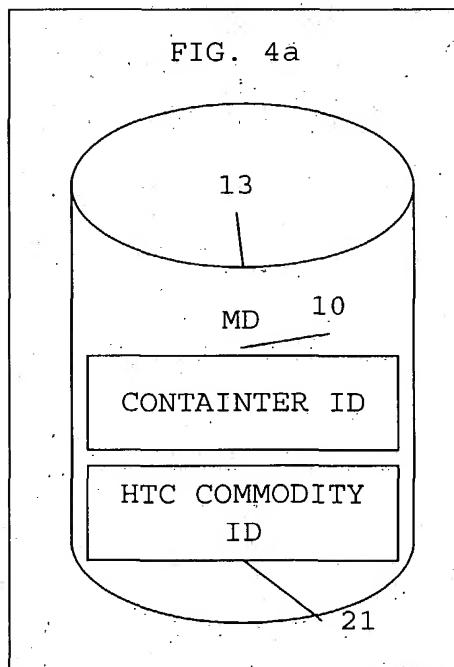
18

19

20

FIG. 4a

FIG. 4b



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FIG. 5

CREATE ORIGINAL BACKGROUND FINGERPRINT

22

GATHER DATA FROM EMPTY
TEST CONTAINER

23

DIGITIZE DATA INTO
BOTH INTENSITY OF SOURCE
AND ENERGY OF EACH
GAMMA RAY GATHERED

24

STORE DIGITIZED DATA
AS THE ORIGINAL
BACKGROUND FINGERPRINT

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FIG. 6

CREATE WEAPON FINGERPRINT DATABASE

25

GATHER DATA FROM TEST
CONTAINERS WITH KNOWN
DANGEROUS RADIOACTIVE
MATERIALS

26

DIGITIZE INTO INTENSITY
OF SOURCE AND ENERGY
OF EACH GAMMA RAY GATHERED

27

SUBTRACT ORIGINAL
BACKGROUND FINGERPRINT

28

STORE EACH TEST
CONTAINER RESULT IN WEAPON
FINGERPRINT DATABASE

FIG. 7

CREATE MANIFEST FINGERPRINT DATABASE

29

GATHER DATA FROM TEST
CONTAINERS WITH KNOWN
LEGITIMATE CONTENTS

30

DIGITIZE INTO INTENSITY
OF SOURCE AND ENERGY
OF EACH GAMMA RAY GATHERED

31

SUBTRACT ORIGINAL
BACKGROUND FINGERPRINT

32

STORE EACH TEST CONTAINER
RESULT TOGETHER WITH ITS
HTC/COMMODITY ID
IN THE MANIFEST
FINGERPRINT DATABASE

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FIG. 8

**CREATE INSPECTION DAY BACKGROUND FINGERPRINT
DATABASE**

33

BEGINNING OF EACH DAY OF
USE, GATHER DATA FROM
EMPTY TEST CONTAINERS

34

DIGITIZE INTO INTENSITY
OF SOURCE AND/OR ENERGY
OF EACH GAMMA RAY GATHERED

35

STORE RESULT AS
INSPECTION DAY BACKGROUND
FINGERPRINT IN DATABASE

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FIG. 9

